

**Remarks**

Claims 1-51 were originally filed in this application.

Claims 4, 6, 31, 39-48, and 50-51 were previously canceled without prejudice or disclaimer.

Claims 39-51 were withdrawn from consideration as being directed to a non-elected invention. Claims 34-38 and 52-61 were constructively withdrawn from consideration as being directed to non-elected inventions that are independent or distinct from the invention originally claimed. Claim 49 was subsequently rejoined with the elected claims.

Claims 5 and 18 are currently canceled without prejudice or disclaimer.

Claims 1, 10, 20, 21, 23-30, 32, 33, and 49 are currently amended without introducing new matter. Support for the amendments can be found throughout the specification, claims, and drawings as originally filed. Further, withdrawn claim 34 is currently amended without introducing new matter.

Claims 1-3, 7-17, 19-30, 32-33, and 49 are currently pending, with claims 1, 10, 20, and 49 being in independent form.

**Rejections under 35 U.S.C. § 103**

Claims 1-5, 7-30, 32-33 and 49 were rejected under 35 U.S.C. § 103(a) as would have been obvious over the disclosure of Emery et al. in U.S. Patent No. 6,482,304 B1 (hereinafter “Emery”) in view of the disclosure of Horinouchi et al. in U.S. Patent No. 5,980,716 (hereinafter “Horinouchi”) and the disclosure of Gallagher et al. in U.S. Patent No. 5,736,023 (hereinafter “Gallagher”).

Emery allegedly discloses at Fig. 1 (reproduced below) and claims 1-34, an electrochemical device with first and second compartments having inlets and outlets, a liquid reservoir to contain the purified and further purified water, and a point of use fluidly connected to the outlet of the liquid reservoir. Emery allegedly further discloses, at column 4, lines 48-50, using valves and pumps to move the water through the system; and, at column 5, lines 20-33, using a sensor to control the process, i.e., a volume switch, to maintain the desired volume in the tank.

Horinouchi is relied on to teach the use of water from the reservoir as the initial feed and allegedly discloses feeding the feed water first to a reservoir and then through a cell. Allegedly, because one skilled in the art would have been motivated to use a reservoir to feed the water through the purification system and recycle the purified water back to the reservoir, it would have been obvious to modify Emery with Horinouchi.

Gallagher, at column 14, line 48 to column 15, line 12, is relied on to teach the conservation of water by recycling the concentrate.

Applicants disagree that the respective subject matter of each of independent claims 1, 10, 20, and 49 would have been obvious over Emery in view of Horinouchi and Gallagher because none of the cited references teaches a point of use selected from the group consisting of a sink faucet, a shower head, and a dishwasher through a household distribution network, or delivering treated water from a reservoir to a point of use selected from the group consisting of a sink faucet, a shower head, and a dishwasher through a household distribution network.

Further, none of the cited references teaches establishing a third water circuit or a fourth water circuit beyond the first and second water circuits.

One skilled in the art would not have modified Emery with Gallagher.

Gallagher provides a “novel polarity reversal protocol involving fluid stream distribution, rather than conventional concentrating and depleting fluid stream interchange.” (Gallagher at column 6, lines 42-45.)

In contrast, Emery discloses a device that cannot be modified to incorporate polarity reversal cycles. As illustrated below, Emery at Fig. 1, discloses an asymmetric electrodeionization device. Feed is introduced into chamber 22, having anion exchange material, and into chamber 12, having cation exchange material. (Emery at column 4, lines 31 et seq.) Water in holding tank 4 is introduced into chamber 24, having anion exchange material, and then into chamber 8, having cation exchange material. (Emery at column 4, lines 48 et seq.)

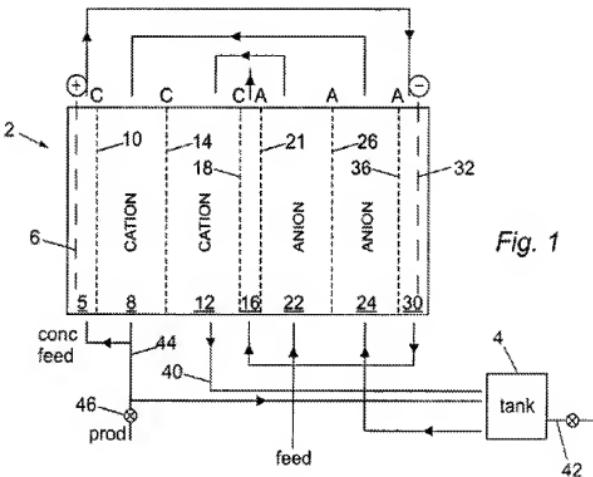


Fig. 1

Emery teaches that the cation and anion exchange material are regenerated when water is not flowing. (Emery at Abstract and at column 6, lines 28 et seq.) Thus, the cathode 32 generates OH<sup>-</sup> species that regenerates the anion exchange material in chambers 24 and 22, and the anode 6 generates H<sup>+</sup> species that regenerates the cation exchange material in chambers 8 and 12.

However, reversing the current polarity would destroy the regeneration features of Emery because electrode 32 would serve as an anode, generating H<sup>+</sup> species that cannot regenerate the anion exchange materials in chambers 24 and 22, since the anion selective

membrane would inhibit transport therethrough. Also upon polarity reversal, electrode 6 would serve as an anode, generating OH- species that cannot regenerate the cation exchange materials in chambers 8 and 12 because the cation exchange membrane would inhibit transport therethrough.

Because Emery's disclosure cannot be relied upon or modified to incorporate polarity reversal techniques, one skilled in the art would not have incorporated Gallagher's approach thereinto, which relies on a novel polarity reversal technique.

Therefore, any *prima facie* case of obviousness is rebutted.

For at least the same reasons, the respective subject matter of each of claims 2-3, 7-9, 11-17, 19, 21-30, and 32-33, each of which respectively depends from independent claims 1, 10, 20, and 49, would have been obvious over Emery in view of Horinouchi and Gallagher.

Dependent claims 5 and 18 are canceled thereby rendering the rejection moot as to these claims.

Accordingly, reconsideration and withdrawal of the rejection of claims 1-5, 7-30, 32-33, and 49 under 35 U.S.C. § 103 is respectfully requested.

#### Conclusion

In view of the foregoing Amendments and Remarks, reconsideration is respectfully requested. This application is in condition for allowance; a notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this Response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If

there is a fee occasioned by this Response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762 (ref. I0168-708219).

Respectfully submitted,  
*Anil D. Jha et al., Applicants*

By: /elias domingo/  
Peter C. Lando, Reg. No.: 34,654  
Elias Domingo, Reg. No.: 52,827  
LANDO & ANASTASI, LLP  
One Main Street  
Cambridge, Massachusetts 02142  
United States of America  
Telephone: 617-395-7000  
Facsimile: 617-395-7070  
Attorney for Applicants

LA Ref. No.: I0168-708219

Date: September 22, 2009